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SCIENTIFIC RESULTS OF A FOURTH EXPEDITION  
TO FORESTED AREAS IN EAST AND CENTRAL AFRICA

VI

ITINERARY AND COMMENTS

BY ARTHUR LOVERIDGE

WITH FOUR PLATES

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VI

*Itinerary and Comments*

BY ARTHUR LOVERIDGE

INTRODUCTION

For various reasons it would appear inopportune at the present juncture to devote the time necessary to elaborating the ecological and zoogeographical data accumulating from this, and previous, expeditions so generously sponsored by the John Simon Guggenheim Memorial Foundation of New York.

On several occasions, however, correspondents in Africa have written requesting specific information about, or the latitude and longitude of, some of the more obscure localities mentioned in the reports already printed, so that it would seem advisable to publish the itinerary without further delay. A synopsis of it has, indeed, been furnished in the caption accompanying Plate 1, and it has not been thought necessary to enlarge on this in respect to places where only a single night was spent, with consequently little collecting.

For the others I am now supplying the latitude, longitude, altitude, the all-important meteorological conditions prevailing at the time of my visit, duration of stay, and position of camp. This in turn is followed by a brief survey of the vegetational environment, or a reference to where such an account has been published elsewhere.

The composition of the fauna in relation to life zones receives attention, more particularly for localities in Tanganyika Territory where it has greater significance on account of our knowledge being more complete. When one contemplates the vastness of the largely trackless forests in Uganda, one feels that the results accruing from a stay of two weeks in areas of from 120 to 180 square miles in extent, is altogether too inadequate to justify one in embarking on detailed speculation as to what does, or does not, occur.

Species of exceptional interest receive mention where it is thought that they may assist in visualizing the environment, or where, because of their rarity, other zoologists visiting the locality would wish to know of their occurrence. Special reference is made to forms of which the type happens to have come from the particular locality under discussion.

The groups already reported upon in this Bulletin are as follows:

Volume	Pages	Class	Specimens	Species	New to M.C.Z.
89	145-214	I Mammals	812	116	40
89	215-275	II Birds	809	246	10
91	183-234	III Crustacea	389	20	4
91	235-374	IV Reptiles	1862	151	17
91	375-436	V Amphibians	1681	77	10

It has been somewhat of a disappointment that no one has been able to undertake the identification of, or to report upon, the fairly extensive collections of other invertebrate groups such as mollusks, myriapods, and earthworms. In addition to zoological material, we purchased from Baamba and Banyaruanda tribes 1613 ethnological items, with a gross weight of almost one ton, which were sent by truck and train over a thousand miles to the port of shipment.

For part of the data regarding altitudes, temperature, composition of forests, etc., I am indebted to "Uganda" by Messrs H. B. Thomas and R. Scott, 1935, and to the "Handbook of Tanganyika Territory" by G. F. Sayers, 1930; both mines of reliable information.

There remains only to again express my deep gratitude to the John Simon Guggenheim Memorial Foundation, and to Dr. Thomas Barbour, Director of the Museum of Comparative Zoölogy, for making possible this expedition, of whose harvest of herpetological material I am now able to take full advantage in the revisionary studies of African lizards upon which I am engaged.

## ITINERARY

### UGANDA

*Mabira Forest, Kyagwe (Chagwe).* 0°24' N., 33°0' E. Alt. 4000 feet.

As the rains were still continuing we accepted the generous offer of Mr. L. Jarvis to occupy the late Major Cuthbert Christy's old house at **Mubango**, a rubber and coffee plantation in the southern end of the forest, five miles north from Najembe, which is twenty miles southeast of Jinja on the Jinja-Kampala road.

Arrived at noon on November 5, and left on the 21st.



A heavy shower amounting to .76 inches fell on the afternoon of our arrival, .17 the following day, and .75 on the 14th. Actually a shower or two occurred almost daily but the precipitation was too small to be registered. The average annual rainfall at Mubango is 55 inches. The daily temperature at 7 a.m. averaged 66°, and at noon 80°.

We had come here largely because Major Christy's labours had made the Mabira, which covers 120 square miles, type locality for *Leptopelis n. christyi*, *Hylambates verrucosus*, *Miodon g. christyi*, and *Aparallactus christyi* (= *A. modestus*). Of these we were successful in securing only the first and last.

Despite what appeared to me to be ideal conditions, I personally captured only three snakes during as many days primarily devoted to searching for them both in the forest and along its edge, where drifts of leaves between buttress roots and rotting logs provided suitable retreats. On four succeeding days I employed an allegedly expert snake-catcher who got nothing during that entire period. Yet some two-score labourers, engaged in clearing undergrowth on the plantation, brought in snakes at the rate of nearly two a day, and of these the first eleven snakes represented ten different species! This astonishing variety continued until we actually had eighteen species for a total of twenty-seven snakes. Of these one—*Dipsadoboa unicolor*—was new for Uganda, another—*Bothrophthalmus l. lineatus*—constituted the most easterly record for the species, though its presence here had been forecast by Lt. Col. Pitman.

Pitman (1934, Uganda Journal, 1, pp. 7-16) has furnished an interesting account of the Mabira and its fauna and flora, rendering unnecessary further details here. Lizards, with the exception of the arboreal *Algiroides africanus*, were disappointing, being of widespread species. A single chelonian was encountered.

The dense undergrowth rendered bird collecting extremely difficult and only twenty skins were prepared during the fortnight. More than a score of mammals were taken, however, including such forest forms as *Cercocebus*, *Cercopithecus*, *Helioseiusurus*, *Tamiscus*, *Protoxerus Cephalophus* and an arboreal pangolin which was described as a new race (*Phataginus tricuspis mabirac*).

*Budongo Forest, Bunyoro.* 1°42' N., 31°24' E. Alt. 4000 feet.

Camp was pitched in the mahogany nursery at BISU beside the Buchanan Saw Mills, so that full advantage might be taken of the three-mile-long corridor cut into the heart of the forest.

Arrived in afternoon of November 22, and left on December 7th.

Heavy downpours occurred at intervals during our stay for the rain-

fall here is well distributed throughout the year, the annual average being 65 inches. During our visit the daily temperature at 7 a.m. averaged 60°, and at noon 82°.

Situated on the north-north-westerly slope above the escarpment towards the northern end of Lake Albert, Budongo is rich in mahogany and consequently considered the most valuable of all Uganda's lovely forests. Ironwood trees are also plentiful, in some areas forming over 50% of the canopy and being largely responsible for the maintenance of its evergreen appearance. The forest survey reveals that the second story stratum, attaining about 80 feet, is composed in part of such genera as *Celtis* and *Funtumia* spp., while the third story is scanty. Bordering the forest and at the edge of clearings, a dense, often impenetrable, undergrowth of bush has sprung up; but in the depths of the forest where the canopy was contiguous one might wander at will or chase the frogs which went leaping over the damp leaves that carpeted the forest floor.

Our visit added four amphibia to the Uganda list, the most interesting being *Rana christyi*, for Budongo, covering about 180 square miles, shows very close faunal relationship with the great Ituri Forest lying away to the west in the Belgian Congo.

This is borne out by a number of interesting herpetological records recently resulting from the collections made here by Mr. W. J. Eggeling, Conservator of Forests, whom we had the pleasure of meeting. This West African complexion was reflected by 7 of the 9 species of snakes, and 4 of the 7 kinds of lizards collected, though one of these—*Algiroides africanus*, is more central.

Budongo is type locality for 7 valid, and 2 invalid, races of birds, only one of which I succeeded in getting, this was the gorgeous little forest kingfisher (*Myioceyx lecontei ugandae*) which obligingly alighted on a stump in camp.

Of the 10 species of mammals secured, only 4 can be considered definitely western, the best being a huge horseshoe bat (*Hipposideros cyclops*) netted in a clearing deep in the forest, where was also the great tree on which I shot four small chipmunk-like squirrels (*Tamiscus alexandri*). Here too we trapped a strange harsh-furred mouse (*Lophuromys aquilis* subsp.) whose race proved unidentifiable; perhaps a series might reveal it as an undescribed subspecies.

*Kibale Forest, Toro.* 0°24' N., 30°24' E. Alt. 4200 feet.

Camp was made near the Duta River where it crosses the new road being cut through the forest about 20 miles southeast of Fort Portal.

Arrived late on December 8, and left on the 18th.

Thunderstorms, accompanied by rain, occurred almost every afternoon, while on two days an exceptionally heavy downpour continued on throughout the night. The annual average rainfall is 56.87 inches. During our stay the daily temperature at 7 a.m. averaged  $59^{\circ}$ , and at noon  $77^{\circ}$ .

Kibale, together with the adjacent Itwara and Muhangi Forests, covers about 276 square miles. The northern portion, traversed by the Kampala-Fort Portal Road, is impenetrable on account of the dense thicket undergrowth. Acting on the advice of Mr. W. J. Eggeling, therefore, we selected the southern portion as being more open, the enormous buttressed trees sufficiently dense as to prohibit undergrowth in many areas. After penetrating the forest about a mile-and-a-half we had to camp for the Dura River was still unbridged; beyond the river the road continued for another two-and-a-half miles through beautiful forest, and it was along this stretch that most of my collecting was done.

Excursions along this road during and immediately after heavy rain were productive of sundry snails, slugs and worms, the latter very numerous and one species frequently a couple of feet in length. This larger species, with a diameter as great as one's thumb, was remarkably iridescent. Beyond the forest proper these worms were encountered in muddy soil beside a stream which flowed through a patch of palm forest much frequented by elephant. Butterflies in bewildering variety surpassed anything which I had seen anywhere in East Africa.

It was disappointing, therefore, to find the herpetofauna extremely scarce, not merely in species but in individuals also. All our efforts resulted in obtaining only 7 species of reptiles and 7 of amphibians, though there was some compensation in the fact that all were exclusively sylvicoline species with the exception of *Agama atricollis* and *Bufo r. regularis* which are equally at home in the savanna. The headman of the gang engaged in felling trees with which to bridge the Dura, informed me that they encountered from 1 to 3 snakes only per month. During the week the only one they brought me was a *Rhynchophis a. elgonensis*. It was this paucity of poikilothermous creatures that decided me to leave after ten days instead of remaining three weeks as originally planned.

Monkeys were the dominant form of animal life and no fewer than 5 species, of which I collected 4, were observed feeding *within a hundred yards of my tent*, the source of attraction being the huge spherical fruit borne by a certain tree. Of a dozen species of mammals collected, a squirrel (*Funisciurus p. victoriae*) was the only novelty.

*Bundibugyo, Toro.* 0°41' N., 29°56' E. Alt. 3200 feet.

Stayed at the comfortable rest camp at Saza headquarters for **Bwamba** District.

From the evening of December 19 to 26th.

A few showers occurred during the week. No annual rainfall record was available as the area has only been opened up recently, but statistics are being collected at the mission. During our stay the daily temperature at 7 a.m. averaged 55°, and at noon 62°.

This area, marked on the Uganda Survey Map of 1928 as Bwamba Forest, is now largely covered by native gardens, including plots of coffee, cotton, and bananas, with extensive rice cultivation in the swampy areas. Elsewhere rank grass fifteen feet high, scattered trees, clumps of indigenous oil palms (*Elaeis guineensis*) and patches of forest. The latter, said to amount to 140 square miles, is an extension of the great Ituri Forest on the opposite bank of the Semliki River.

Naturally, therefore, sylvicoline snakes are plentiful and a large collection could have been made had we been able to stay longer. At first, however, the Baamba mutilated them so badly that many had to be rejected and it was only during the last few days that they began to arrive in good condition. At least 14 of the 16 species secured were forest forms, of which *Boiga pulverulenta* and *Pseudohaje goldii* were the second records for Uganda and *Miodon g. collaris* the first for this race.

Three of the five kinds of lizards taken were widespread savanna or eastern forest forms. No attempt was made to collect birds and the only ones preserved were the swamp-loving rail (*Sarothrura p. centralis*) and warbler (*Prinia m. immutabilis*).

Except for a young duiker, all 42 of the mammals preserved were rodents representing 9 species which reflected our position in the western foothills of the Ruwenzori Mountains overlooking the Semliki River, some being montane species, others races of savanna rats.

The Baamba, who give their name to this region, are a forest tribe of semi-pigmy stock who would undoubtedly prove helpful to a naturalist working in this country; unfortunately, as already indicated, deforestation has resulted in encroachment by many savanna forms which would probably preponderate among specimens brought in. The big tree cobra was obtained by Bakonjo, a primitive Bantu people living on the slopes of Ruwenzori. Most of the cultivation was being done by Batoro, while administration was largely in the hands of Bahima, the tall Hamitics and former overlords. We found all of these people most friendly and only too eager to dispose of ethnological material, much of it superseded by changing customs.

*Bugoye, Ruwenzori Mountains.*  $0^{\circ}17' N.$ ,  $30^{\circ}13' E.$  Alt. c. 5600 feet.

Camped in the rest camp enclosure.

December 26 to 28th, 1938, and January 21 to 24th, 1939.

Occasional showers. We had left our thermometer hanging on a tree in the heart of Kibale Forest so thereafter we were unable to record temperatures.

After leaving Bundibugyo we drove over the northern end of the Ruwenzori Range, which is about 30 miles in maximum width, through Fort Portal, skirted the eastern flank of the 65-mile-long range, then turned off the main road and took the side road to Bugoye where it terminates.

Bugoye, at the southeastern foot of the range, is not only the type locality of *Chamaeleo b. elliotti*, of which we obtained a good series, but the jumping-off place for any ascent of the mountain (16,800 feet) from this direction. This was the route followed by the British Museum Expedition of 1908, an expedition which resulted in several score of new vertebrates. It was partly in the hope of securing topotypes, at least of the reptiles, that we now planned to visit the two most readily accessible sites occupied by Woosnam and his party.

We stayed at Bugoye only as long as it was necessary to get together sufficient porters for the ascent, while on the return journey I was fully occupied with packing the specimens obtained on the mountain before the lorry should arrive to pick us up.

Consequently little collecting was done in this uninteresting spot whose surrounding slopes, eroded by constant rain, are clothed only in sparse grass with thickets and, lower down, acacia or orchard forest.

*Mubuku (Mobuku) Valley, Ruwenzori.*  $0^{\circ}24' N.$ ,  $30^{\circ}0' E.$  Alt. 6800 feet.

Camped in deep forest between the Mubuku and Mahoma Rivers, near foot of Nyinabitaba Ridge.

Arrived about noon on December 29, 1938, and left January 9, 1939.

Rain fell on every day except one. The worst aspect of the situation was the absence of sunshine due to overhanging clouds which cast an evening-like gloom and stillness over the forest for hours on end. Sunday was the best day with 7 hours of sunshine, on Monday about half that amount, the rest averaged between 1 and 2 hours only. The temperature at midday was probably from  $55^{\circ}$  to  $66^{\circ}$ . Under such conditions collecting was difficult, birds were silent except during the brief hours of sunshine when they were engaged in feeding on the forest canopy well out of range. Drying of skins and other specimens became a constant nightmare.

Despite the sodden state of the undergrowth only a toad and 3



species of frogs were encountered, all the latter (*Rana f. angolensis*, *Phrynobatrachus graueri*, and *Hyperolius ? alticola*) previously recorded from the mountain.

Reptiles were limited to 5 species of which two were new for Ruwenzori, these were *Cnemaspis a. elgonensis* and *Lygosoma g. graueri*. This little pentadactyle skink, together with the four-toed *L. mcleagris*, of which we secured topotypes, were relatively plentiful. Topotypes were also obtained of the chameleons (*C. j. johnstoni* and *C. xenorhinus*), the latter a great rarity apparently dwelling in the forest canopy. Naturally *C. b. rudis*, obtained by the British Museum Expedition at 10,000 feet, was not met with at the lower level but I was surprised to see no *Lacerta jacksoni*, a species that has been taken at 8500 feet.

A pair of crimson-winged plantain-eaters, presumably *Ruwenzorornis*, were seen near camp one day but out of gunshot in the tallest trees. A mountain buzzard (*Buteo orcophilus*) visited our lonely camp and fell to my gun, while topotypes of half-a-dozen passerines were also collected.

Mammals were decidedly scarce, not a bat was seen, and, though a net was spread across a suitable clearing, nothing was taken. *Colobus* were seen only on the march to this camp and all the monkeys seen were two solitary males of *Cercopithecus m. stuhlmanni*, the one collected would be almost a topotype of the synonym *carruthersi* which was first obtained a thousand feet higher up the mountain. During our entire stay squirrels (*Heliosciurus* and *Tamiascus*) were observed four times only. Of three species of rodents preserved one was a topotype of the interesting mouse (*Hylomyscus d. denniae*). A red duiker was seen once and heard a couple of times but attempts to collect it failed. Not a trace of any carnivore was noted.

*Mihunga Ridge, Ruwenzori.* 0°21' N., 30°3' E. Alt. 6000 feet.

On the outward journey we had camped for the night beneath the fig tree—on the upper Mihunga Ridge and collected a few specimens; returning we passed it to pitch our tents on the lower Mihunga Ridge on the very site formerly occupied by the British Museum Expedition in 1908.

Night of December 28, 1938. Then from January 9 to 19th, 1939.

We had fled from the Mubuku Valley camp on account of adverse climatic conditions, now, though only a few miles distant as the crow flies we seemed to be in another world. On this largely treeless spur, bounded on the north by Weria Ravine, on the south by the Kanyon-gorogoro Ravine, we were able to profit by the hot sunshine which lasted for the first three days until 3 p.m. and was then followed by

showers. No rain at all occurred on the four days following while during the last week, though the sky was often covered by fleecy clouds through which the sun had difficulty in breaking, dark clouds formed only in the late afternoon and then frequently dispersed without precipitation in our vicinity, though at times rain might be seen falling elsewhere.

Collecting was not confined to the 6000-foot ridge for excursions were made to the forested heights a 1000 feet higher as well as to the foot of the ridge where it tapered out into the swamps of the Mubuku Valley. For descriptions of this and the last camp the reader is referred to Woosnam's account (1910, *Trans. Zool. Soc. London*, **19**, pp. 5-24), and to some important comments by Allen and Loveridge (1942, *Bull. Mus. Comp. Zoöl.*, **89**, p. 148).

Almost all of the amphibians (*Bufo r. regularis*, *Leptopelis n. christyi* and *Phrynobatrachus graueri*) and most of the 9 species of reptiles taken, came from the swamp about 500 feet lower than our camp. Here, high in the papyrus, were coiled the green vipers (*Atheris n. nitschei*) topotypes of *A. woosnami* of which we had come in search. Here also we obtained the first Uganda example of the dwarf chameleon (*Brookesia s. boulengeri*).

Of 30 kinds of birds collected, 4 were topotypic, while each morning our traps yielded some topotypic rodent until we had 10 of the species collected at Mihunga by Woosnam and his associates; 3 others were almost topotypic the types having been taken at higher altitudes. This region appears to be as rich in mammals as it is poor in amphibians for, in addition to the score of species collected, we found three sleeping platforms built by chimpanzees in a tree in Weria Ravine. The Bakonjo informed me that these platforms are made by itinerant chimpanzees which come from the forests of the Mubuku in search of bananas and, when benighted, construct a platform. We saw one such individual while we were engaged in collecting in the swamp.

*Nyakabande, Kigezi.* 1°44' N., 29°45' E. Alt. 6925 feet.

Stayed at the commodious rest camp.

Arrived at noon on January 25 and left on 30th. Returning from Mushongero on February 4, we had to wait for a lorry until the 8th.

Though there was relatively little sunshine, the weather was generally fine except for a few heavy showers.

Nyakabande is situated in a lava-strewn plain, much of which is industriously cultivated by the Banyaruanda who gather up the larger blocks of lava and pile them on the periphery of each small plot, where they serve as a windbreak. There is no water in the immediate

vicinity, and perhaps it is just as well not to visit the foul pool from which your water supply is likely to come. Presumably it was from this pool that the four species of amphibia obtained here came.

Nyakabande is about six miles from Kisolo (the rendering given by the Uganda Survey on its map A 530 of 1928, often misspelled Kisoro or Kissolo), type locality of the toad I named *Bufo r. kisolensis*, whose validity can no longer be maintained as a result of the fresh material obtained at Nyakabande and Mushongero.

The reptile fauna of these two localities is essentially similar as we got only three species at the former not taken also at the latter, which is reached by a very arduous climb over the mountains.

In the rest house grounds we found a weaver (*Ploceus n. graueri*) nesting in a vociferous colony of the superficially similar *P. c. feminina*. At Mushongero we obtained a toptype wagtail. (*Motacilla c. wellsi*) and a pair of flycatchers (*Alseonax a. ruandae*) which race was described from Bufundi on nearby Lake Bunyonyi.

At both localities the Banyaruanda apparently eat the huge mole rats (*Tachyoryctes ruandae*), for they brought in as many as I would take. The species was first collected on Mt. Muhavura which is in full view of the rest house at Nyakabande. More valuable was an otter (*Lutra m. tenuis*) which I shot in the lake near Mushongero, for it was from this lake that Hinton described the synonym *L. m. mutandae*.

The main object of our stopover at Nyakabande, however, was to purchase ethnological material from the teeming tribes inhabiting this upland plain. Collectively known as Banyaruanda, they apparently consist of a small admixture of Hamitic overlords, the cattle-owning Batusi and Bahororo. The bulk of the population consisting of Bantu agriculturists known as Bahutu, while a few semi-pigmy Batwa are present, chiefly in the vicinity of the lakes.

*Mushongero, Lake Mutanda, Kigezi.* 1°46' N., 29°41' E. Alt. 5925 feet.

Stayed at the rest camp, which is situated on a little peninsula projecting from the east bank near its northern end.

Arrived late in the afternoon of January 30, and left early on February 4th.

Frequent rainstorms swept across the lake whose mountain-girt northern half appeared to attract and hold the heavy black clouds which overhung it during much of our brief visit. When the sun was hidden it was decidedly chilly.

Except for its extensive papyrus swamps, Lake Mutanda offers little indication of its proximity to the equator. In fact with its numerous tree-covered islets and purplish mountains its general appearance is



not unlike that of a Scottish loch. The brambles, bracken, and short, wind-swept grass clothing the lower slopes of the mountains all suggest that it was with good reason that these uplands have been called the Switzerland of Central Africa.

As for the name Mushongero (misspelt Mushungero on all my labels), I suspect that there is some connection between it and *Mushungwe*, the Lugezi name for leach, for these loathsome creatures swarm in the shallow waters in the vicinity of the rest camp. Crabs (*Ngara*: Lugezi) were also not uncommon, and the series secured have been described by my colleague, Dr. F. A. Chace Jr., under the name of *Potamon (Gothelphusa) mutandensis*.

The waters of the lake were teeming with *Xenopus l. bunyoniensis*, originally described from nearby Lake Bunyonyi, but search of the papyrus both by day and night resulted only in the capture of a single example of the genus *Hyperolius*, and that unidentifiable! The most perplexing aspect of the amphibian fauna was the intermediate condition of many *Rana fuscigula*, some, as one would expect from the terrain, were typical, others showed the longer hind limb of the sylvicoline race *chapini*. Three other ranids taken here also seemed to suggest that some deforestation had taken place.

This was again the case with a couple of the dozen species of reptiles collected. We had gone to Mushongero primarily in search of a blind snake obtained there by Col. Pitman; hoping that an adequate series of the creature might settle its uncertain status. In this we were successful, the 9 examples undoubtedly referable to *Typhlops blanfordii lestradei*, originally described as a full species from nearby Ruhengeri but obviously related to *blanfordii* of the Ethiopian highlands; another link with the latter region is the presence at Mushongero of the little slug-eater (*Duberria l. abyssinica*).

## BELGIAN RUANDA

*Kiraga near Kisenyi, Lake Kivu.* 2°38' S., 29°18' E. Alt. c. 5800 feet.

Camp was pitched in a plantation of eucalyptus through which the road passes about three miles above Kisenyi, a township situated on the shores of Lake Kivu at 4800 feet.

Arrived in afternoon of February 8, and left early on the 13th.

Some showers.

Most of our collecting at Kiraga was done along the banks of, and in the ravine cut by, the Kisenyi River, which cascaded over falls just

below our camp. The ravine was more or less choked by luxuriant growths of grass and sedge, but in patches cleared for gardens we turned over piles of vegetable debris and sought our quarry in the extensive plantations of bananas.

Only 4 species of amphibia and 6 of reptiles were taken, none of especial interest with the possible exception of *Lacerta jacksoni* which, in the absence of trees, has adapted itself to a terrestrial life. By far the most important of half-a-dozen mammalian species were a pair of skunk-like zorillas (*Pocilogale a. doggetti*).

As we were debarred from killing anything but "vermin" on account of our permit for scientific collecting not having arrived from Stanleyville, we caught the first boat from **Goma (Ngoma)**, type locality for a burrowing viper (*Atractaspis schoutedeni*), which appears to be based on a slightly aberrant example of the widespread *A. irregularis*, which we got.

### BELGIAN CONGO

*Mamvu Bay, Idjwi Island.* 2°12' S., 29°0' E. Alt. 4788 feet.

Camped on the lawn of Mons. van der Berck v. Heemstede's estate.

Arrived at dusk on February 14 and left on 16th, returning March 6th.

Our arrival was greeted by torrents of rain and waves lashed by a gale.

Wading in thigh boots among the sedges of the Bay, and aided by a flashlight, I was able to capture toptypes of *Hyperolius kivuensis*, *kwidjuensis*, *kandti*, and *macroductylus*, and show that actually only two sexually dichromatic species are present. The types had been collected by the poet Kandt, who had made his home on Idjwi Island.

*Upper Mulinga River, Idjwi Island.* c. 2°8' S., 29°3' E. Alt. 16500 feet.

Camped beside a footpath where it crosses a stream known as the Upper Mulinga. This, I imagine, was about 900 to 1000 feet below the 800 metre summit of the mountain, which dominates the island.

Arrived on February 16 and left at noon on March 6th.

The weather was very varied, we enjoyed much sunshine when it would be quite hot; violent thunderstorms accompanied by lashing rain were not uncommon, however, and always resulted in a considerable drop in temperature.

<sup>1</sup> Not 4500 feet as printed on p. 149 of the report of Mammals, 1942, Bull. Mus. Comp. Zool., 89, pp. 147, 214. I am indebted to Dr. J. P. Chapin for pointing out this error.

Day after day I made excursions up the mountain to the extensive remnants of magnificent forest, even then being destroyed by natives contrary to regulations; policing of such remote spots being difficult. Apart from some small patches of forest, our immediate vicinity consisted of pasture land, millet fields, dense patches of sedge, and swampy areas through which meandered small rivulets.

It was in this latter habitat that I collected most of the 8 species of amphibia taken, but the choicest of all, a tiny, long-fingered male *Arthroleptis xenochirus*, was brought to me by a native lad. Only 2 of the species were savanna forms.

Of the 25 species of reptiles collected, all but a fourth were of forest association and included such rarities as *Miodon g. grauceri* and *Algiroides rauereselli*. The island, variously spelt Idschwii, Kwidjwi, and Kidjwi by the Germans, is type locality for *Mabuya m. kwidjwiensis* and *Lygosoma blochmanni*. Over fifty of each were preserved, sufficient to demonstrate that the former does not differ structurally from true *M. m. maculilabris*, and that the latter is constantly three-toed. The local chameleon appeared to differ sufficiently from its continental congeners to be named *C. d. idjwiensis*.

Also new were 8 examples of a warbler (*Apalis cidos*), and we secured topotypes of *Barbatula kandti* = *Pogoniulus b. jacksoni*, *Colius s. kiwuensis* and *Spinus c. frontalis*; in all 42 species of birds were collected at this camp.

Two new races of rodents (*Thamnomys v. kivuensis* and *Leggada b. ablutus*) were discovered, the former just behind my tent, the latter differing from the typical race occurring on the Ruwenzori Mountains. An interesting aspect of the mammalian fauna of this mountain on Idjwi was that a third of the 21 species collected were referable to races originally described from Ruwenzori; two others (*Cercopithecus m. schoutedeni* and *Lophuromys a. laticeps*) were topotypes of local forms.

## TANGANYIKA TERRITORY

Ujiji, Kigoma District. 4°55' S., 29°42' E. Alt. 2800 feet.

Camped beneath the giant mangoes on the western fringe of the town.

Arrived at noon on March 9, and left early on March 16th.

Occasional heavy showers following periods of sultry weather and overcast skies.

As, from May 22 to 29, 1930, I had already visited this famous old

Arab settlement on the shores of Lake Tanganyika, a description of its features will be found in 1933, Bull. Mus. Comp. Zoöl., 75, p. 23.

The purpose of my visit was the same in both instances, viz. to obtain examples of the rare *Amphisbaena phylofiniens*, known only from the two cotypes described in 1905. On the first occasion I was unsuccessful but learned from the natives that it was to be found in Ruanda, a region of rice swamps bordering the Luiche River. Almost daily, therefore, accompanied by two assistants, I tramped over to Ruanda, pausing *en route* to inform each passer-by of our object. Not an amphisbaenid did we find, but as a result of our ceaseless talk 4 specimens were brought in by natives. Since collecting all 7 East African members of the family, I have come to the conclusion that the habitat which these wormlike creatures require is one of moist sand or laterite soil. There is no evidence which would justify the view that they are survivors of a former forest fauna in this region.

While searching for amphisbaenids we secured a good series of a Congolese skink (*Scelotes t. hemptinnei*) which had not previously been taken in Tanganyika. Another first record for the Territory was a "two-headed snake" (*Chilorhinophis gerardi*) though I had postulated its occurrence at the southeast end of the lake in 1933. The Angola race *ornatum* of *Lycophidion capense* was a further addition to the fauna and, from a distributional point of view, an *Aparallactus c. capensis* is interesting.

Additions to the fauna among the 9 species of amphibia taken, were *Rana m. renusta* and *Hyperolius kivuensis*; topotypes of *H. udjijiensis* and *argenteovittis* were also captured.

*Kitaya, Southern Province.* 10°40' S., 40°11' E. Alt. 300 feet.

Tents were pitched on the rest camp site on the bank of the Rovuma.

Arrived at noon on March 24th and left early on April 7th.

Torrential rains fell during our stay, necessitating the employment of porters for the first nine miles of the return journey to Mikindani, i.e. until past a depression of water-logged black cotton soil.

Kitaya is a village, and Liwale headquarters, on the north bank of the Rovuma, (Rowuma; Ruvuma) River, fifteen miles inland from Rovuma Bay. The River forming the southeastern boundary between Tanganyika Territory and Mozambique. Livingstone safaried there from Mikindani in 1866; the two places are now connected by a very rough motor track of about 36 miles. The vegetation is typical of the coastal belt; baobabs, orchard forest, and rank grass on the higher ground, which is very sandy; rice fields and sedge (*Setaria palmifolia*) fringed swamps on the lower.

Huge leeches are present in the swamps, ticks in the long grass. *Aedes*, *Glossina*, *Haematopota*, *Stomoxys*, *Tabanus*, and many other biting flies were an ever-present nuisance.

The purpose of our visit was to secure toponotypical material of three species of sedge frogs (*Hyperolius citrinus*, *microps*, and *Megalixalus flavomaculatus*) collected by Kirk when he accompanied Livingstone. In this we were eminently successful and able to prove that the last named is really a *Hyperolius*, having a horizontal pupil in life. In addition a series of an undescribed race of this genus (*H. p. roxumae*) were collected and described.

We had to depend very largely on our own efforts, for the local people—Konde and Yao—were strangely disinterested in bringing in reptiles or mammals, in fact supplied only two of the latter. Crocodiles as man-eaters play a prominent role in local village life. Soft-shelled turtles (*Cycloderma frenatum*) were laying and in consequence may have been more conspicuous than would normally be the case. The 13 species of snakes might almost have been selected as representative of the most widespread African forms! Except for *Ichnotropis squamulosa* the dozen species of lizards were likewise of little interest.

Birdlife was wonderful, being particularly rich in non-passerine species such as parrots, hornbills, wood hoopoes, cuckoos, and woodpeckers. In all 61 species of birds and a dozen different kinds of mammals were collected during the 13 days spent here. Of the latter a molossid bat (*Mops angolensis orientis*) was described as new.

*Mikindani, Southern Province.* 10°17' S., 40°7' E. Alt. 20 feet.

Tents were pitched about two miles north of the centre of the township, which gives its name to Mikindani Bay on the southeast coast of Tanganyika Territory, on a little rise to the left of the mainroad to Lindi after one passes the Government pumping station. Another noisy pumping station engine has given the name of **Mchuchu** to this area.

First landed at Mikindani on the night of March 22 and accomplished some collecting on the following evening before leaving for Kitaya. Returning from the latter place on April 7 in torrential rain, we just managed to get the tents pitched before darkness fell on the most cheerless conditions of the whole trip. Left by dhow for Lindi, the road being under water for miles, on April 24th.

Fully 6 inches of rain fell during our sixteen days stay, on some days continuing from dawn till dusk. The greatest single precipitation recorded was 1 3/16th inches on April 10, for this information and other kindnesses I am indebted to Mr. E. A. Leakey, District Officer. The average annual rainfall is 36 inches.

Such conditions naturally retarded outdoor studies to some extent. Most of our collecting was carried out in the eastern environs of the township and relatively little in the immediate vicinity of camp. Though the low ground surrounding the latter was largely under water, the rainy season was already so well advanced that spawning was over for the majority of frogs, which were already widely dispersed. Of the 13 species collected only one (*Arthroleptis xenodaetylus*) has any claim to forest associations.

Such primeval forest as may have been here long since disappeared, but the numerous mango and other trees, to say nothing of baobab and coconut, result in providing conditions acceptable to some sylvicoline species. Of the 31 species of reptiles taken, however, only a cobra (*Naja melanoleuca*), is a western forest form, the 7' 6'' specimen providing the most southeasterly record for the species. Topotypes were collected of the only two lizards (*Lygodaetylus g. grotei* and *Amphisbaena orientalis*) described from Mikindani.

Of the 43 species of birds collected, topotypes were shot of *Francolinus h. grotei*, *Lagnosticta r. reichenowi* = *haematocephala*, and *Uraeginthus b. mikindaniensis* = *niassensis*, while of 3 other races described from here we had obtained specimens from nearby Kitaya and Nchingidi.

Only 7 kinds of mammals were obtained, all typical of the coastal zone, the bat *Triaenops afer* being, perhaps, the most interesting.

Mbanja, Southern Province. 9°24' S., 39°45' E. Alt. Sea level to 400 feet.

Camp was made at the edge of **Mitonga (Metonge)** landing field ('aerodrome'), circa 375 feet.

Arrived at noon, by truck from Lindi, on April 25, and left at 8 a.m. on May 6, 1939.

Heavy showers occurred during the first week; the second was practically rainless, the heat tempered to some extent by the southeast monsoon, until we were struck by a gale of wind and rain on our last night.

Mbanja (Mbanya), about 10 miles north of Lindi, is a small village situated on a tidal estuary and almost surrounded by mangrove swamps. The chief and his people were most friendly and helpful. While the village itself is on clays and coral rock, the valley at whose mouth it lies is largely composed of black cotton soil and rich mud extensively cultivated by the industrious inhabitants. Their principal products being ground nuts, potatoes, and mahoga, with a few paupau trees and coconut palms about each hut.



My camp, on higher ground, was largely surrounded by orchard forest heavily interspersed with mango trees and waist-high grass whose barbed black seeds cause considerable discomfort by working through clothing and even puttees. To the west lay dense scrub inhabited by very wary squirrels and blue monkey, for the cry of the latter was heard towards sunset on several occasions. To the east, i.e. between camp and the coast, were native gardens and the extensive Kikwetu Sisal Estate. All this country is composed of bright red and very porous soil derived from eroded limestone.

It is in this soil that *Amphisbaena ewerbecki*, described from here by Werner in 1910, occurs. Our object in coming to Mbanja was solely to get a series and in this we were entirely successful. The soil which furnished a congenial habitat for the amphisbaenid was favoured by six species of fossorial snakes which we collected in addition to 9 other kinds of ophidia, a dozen lizard forms, and 36 of birds.

Game was allegedly shot out by the Germans, who maintained a big camp near here during 1914-1917, but wild pigs were common. At night a solitary little antelope emerged from the scrub to feed on the foliage of the ground nuts. Other animals seen or heard, but not collected, were red elephant shrews, galagos, baboons, hares, ratel and jackal. Man-eating lions had been causing numerous deaths quite recently in neighbouring villages.

*Rondo Forest, Southern Province.* 10°8' S., 39°12' E. Alt. 2700 feet.

Camped at **Nchingidi**, the name given to a clearing at the forest edge approximately three miles from the nearest scattered native huts.

Arrived just before noon on May 9, and remained until the 21st.

Each evening at varying times from sunset (6 p.m.) till 11 p.m., a succession of mist clouds blew in from the ocean and up the face of the escarpment (at whose edge my tent was pitched) to condense on grass and trees. The latter literally 'rained' upon my tent with every gust of wind. At daybreak these mist clouds hemmed us in, completely shutting out the view of the opposite escarpment, invariably persisting till 8 a.m., more usually 9 a.m., occasionally even until noon. In addition about 4 or 5 p.m. there were sharp showers, while sudden and unexpected storms of rain swept the plateau at uncertain intervals, and frequently heavy downpours occurred at night. The nights were always cool but when the sun did break through by day it was very hot.

Unfortunately an error deprived me of my quinine, and repeated drenchings when far from camp brought on a fever which, so far as I was concerned, halted collecting during the last week.

This open forest is situated on the waterless Rondo Plateau, about

25 miles southwest of **Lake Rutamba**, (**Lutamba**), itself some 25 miles by road slightly southwest of Lindi. The curious thing about this forest, of which *mvuli* is the most important constituent, is the entire absence of standing water. Even the heaviest downpours immediately disappeared in the porous sandy soil. To obtain water for domestic purposes, the local natives (Mwera) made a daily journey of three hours (there and back) to the foot of the escarpment. It is not altogether surprising that with water so scarce these people should consider washing superfluous. Though very friendly, these Wamwera only began to busy themselves with bringing in specimens a day or two before our departure.

Despite the absence of water, 5 species of amphibia, all previously taken on the Uluguru Mountains nearly 300 miles to the north, were collected. Of these a tiny toad (*Bufo micranotis rondoensis*) differed sufficiently to warrant description.

This isolated plateau had produced 3 species of fossorial reptiles (*Amphisbaena rondoensis*, *Melanoseps a. rondoensis*, *Typhlops t. rondoensis*) which it was necessary to describe as new. Here also we found *Chlorophis macrops*, *Bitis gabonica*, and *Brookesia breviceaudata* which occur on the Usambara Mountains 350 miles to the north; even more surprising was an undoubted *Aparallactus jacksonii* of Kilimanjaro. The remaining reptiles—12 kinds of snakes and 10 of lizards were representative of the coastal plain herpetofauna.

In the past, principally during the Great War, the forest suffered heavily from native incursions. Subsequently these refugees were removed but evidence of their destructive occupation were to be seen in the numerous clearings, some so eroded as to be semiarid areas with only the scantiest covering of grass, others grass- or bush-grown and inhabited by such non-sylvicoline, house-dwelling lizards as *Hemidactylus mabouia* and *Mabuya striata*, which I assume to have been imported by human agency.

Bird life, though not abundant, presumably owing to the absence of standing water, held promise of being interesting so that it was a disappointment to go down with fever just as I was turning my attention to the avifauna. A beautiful roller (*Eurystomus glaucurus*) of Madagascar was preserved, while the records of the green-headed Oriole (*O. chlorocephalus*) from Mt. Chiradzulu, Nyasaland and the Usambara Mountains are at last bridged by its occurrence on the Rondo Plateau. Two rare flycatchers (*Batis reichenowi* and *Erythrocerus l. thomsoni*), originally described from Mikindani and the Rovuma River respectively, were also among the 25 species obtained at Nchingidi.



Doubtless the water supply is also the reason for the scarcity of mammals, of which only 9 species were taken, the most interesting being *Rhynchocyon p. melanurus*, originally described from Lindi. I heard, but never saw, blue monkey, bushbuck, and a small duiker which the natives called *naunde*.

*Lindi, Southern Province.* 10°0' S., 39°14' E. Alt. 50 feet.

In Lindi Hospital (one week) and at the Beach Hotel (one week). Arrived on May 22 and sailed on June 5th.

The rains, which average 34 inches per annum, were over, and the clay soil already baked hard by a tropical sun.

Lindi, headquarters for the Province of the same name, is situated in Lindi Bay between Kilwa and Mikindani. A population of nearly 4000, and the excellent hygienic conditions of the township, rendered collecting difficult during the week that I daily awaited the arrival of a steamer. All the same we preserved 15 species of amphibia and reptiles, 16 of birds, and 5 of mammals.

On our very first hunt, however, we uncovered the oriental blind snake (*Typhlops braminus*), the fourth and fifth examples to be taken in the Territory. *T. s. mucroso* was the only other snake obtained though bundles of thatching grass, piles of palm fronds, and heaps of rubbish, were turned over a wide area. *Amphisbaena ewerbecki* was the only lizard of interest. An intelligent fisherman told me that four turtles are occasionally encountered in the Bay, he described the luth, loggerhead, hawkbill, and green turtle.

*Siga Caves, Tanga Province.* 5°6' S., 29°4' E. Alt. c. 150 feet.

Camp was pitched on the trail leading to the caves but about a mile from the entrance.

Arrived on June 7 and remained until the 17th.

A few heavy rainstorms occurred at infrequent intervals, the rainy season being over.

The Siga Caves, I took the name from the government signpost erected at the turn off from the main Tanga to Mombasa road, have nothing to do with the Sigi River a few miles to the north. They are sometimes called the **Amboni** or **Mkulumusi Caves** for the main entrances are less than fifty yards from the crocodile-infested Mkulumusi River. The numerous caves are waterworn and in past times undoubtedly formed an underground channel for the river. There are dubious stories of the caves extending for a mile, but at the time of our visit every passage was flooded to within a hundred yards of the entrance.

The fifty acres of forest which surrounds them has suffered con-

siderably, in fact it seemed to me that little remains but a scattering of fine trees surrounded by secondary growth and much scrub. I might add that the caves are held in superstitious veneration by the natives, and propitiatory rites, of which I have given a brief account (1940, *Scientific Monthly*, **51**, pp. 22-35) were held there at the time of our visit. I imagined that the presence of this "spirit" was the reason for the absence of native squatters: later I learned that during, and immediately following, the Great War, natives had moved in but were turned out again by the Administration on account of their reckless destruction of trees.

All 11 species of amphibia, as well as 13 kinds of reptiles obtained at Siga, were typically coastal plain. One gecko (*Cnemaspis a. africanus*) was definitely sylvicoline, while five others proved of assistance in defining a new coastal race named *Hemidactylus t. barbouri*.

No serious attempt was made to collect birds in so well-worked a region, and only 8 species were shot, the choicest being a pair of migrant Malagasy egrets (*Egretta g. dimorpha*) and my first bat-eating hawk (*Machaerhamphus a. anderssoni*).

The latter was, of course, attracted by the thousands of bats which made the caves their home. Of these bats, 96, representing 4 species, were collected; they ranged in size from the huge *Hipposideros g. gigas* to the modest *Miniopterus minor*. Galagos (*G. c. lasiotis*) were also plentiful, their strange cries, mingling with the staccato bark of hyrax and the hooting or screeching of owls, rendered our nights the noisiest of the entire *safari*. The 10 species of mammals, all troglodyte or arboreal except for a spiny mouse (*Acomys w. wilsoni*), were of coastal rather than of forest affinities.

*Amboni Estate, Tanga Province.* 5°3' S., 39°3' E. Alt. 300 feet.

Our tents were pitched beside a small area of forest, largely secondary, which is being carefully preserved by the Estate Management. As Amboni Estate covers nearly 80 square miles, the precise location may be somewhat important, we were located about a mile above **Mabokweni Village** and surrounded on three sides by sisal plantations.

Arrived on June 17 and remained until the 27th.

Rain occurred in scattered showers on about four cloudy days.

It seemed strange that frogs should be assembling at the conclusion of the rainy season, yet a visit to a rice swamp close to Mabokweni Village on the evening of our arrival, resulted in the capture of 154 polypedatid frogs of 9 different species, the females of *Hylambates maculatus* certainly were gravid and about to spawn.

Between this swamp and our camp was an extensive area that had been under sisal since 1913. It had recently been cleared and tractors were now engaged in spreading the vegetable debris which had been piled in long rows and left to rot for two months. By following the twelve-ton tractors to and fro for three days, two species of rapid frogs, 5 of lizards, and 11 of snakes were secured. The latter were largely of fossorial types, among them a burrowing viper (*Atractaspis bibronii*) which conformed to the description of *katangae* of the southern Belgian Congo! Only one frog (*Rana o. gribinguiensis*) and one snake (*Calamclaps u. warreui*) could be cited as largely sylvicoline.

Nor did the forest appear to have any significance as a refuge for surviving forest forms of reptiles, the 5 species taken within its confines being coastal bush or savanna species. Hornbills, both *Bycanistes* and *Lophoceros*, were much in evidence, but no small birds were shot though several hours were spent in looking for them.

Jumping shrews (*Petrodromus s. sultani*) were not uncommon on the outskirts, and galagos of two species (*G. c. lasiotis* and *G. s. zanzibariensis*) were present, the latter extremely plentiful. The place was a refuge also for a band of colobus (*C. p. palliatus*) and some blue monkey (*Cercopithecus m. monoides*) though there was no thought of protecting the latter for whose heads a reward was offered as they attacked the sisal shoots. Bats, a single red squirrel, and a bushbuck complete the list of mammals seen in the forest, though other species were collected in the surrounding plantation.

*Magrotto Mountain, Tanga Province. 5°8' S., 38°45' E. Alt. 2500 feet.*

Camped on a low hill half-a-mile as the crow flies west of the factory of Magrotto Estate.

Arrived on June 27 and remained until July 20th.

The first five days were largely overclouded, raw, damp, and chilly. Cloud-mist like a dense fog, swept into the valley each evening about 4 p.m. remaining until 9 or 10 the following morning when dispersed by the frequent rainstorms which swept across the hills. With the advent of the new moon the vapour was reduced to capping the higher forested ridges; the hours of sunshine increased and for an entire week there were fewer showers. During the last week, however, the weather remained dull with frequent rainstorms. Average annual rainfall 75 inches!

Magrotto Estate, which formerly occupied about 5000 acres of hill-tops capping the mountain, is reduced to half that size today. The more than a million coffee trees of German times have given place to the West African oil-palm, the only plantation of this palm in all

East Africa. My camp among these palms was almost surrounded by a horseshoe-shaped ridge that was largely forested, a gap towards the south admitting the clouds of vapour which, during the southwest monsoon, are an almost regular evening phenomenon. Just below the western foot of the camp flows a river which rises nearby. To the north is a swampy bottom, part of whose smothering mat of vegetation we cleared in our search for frogs.

Prior to 1900, or thereabouts, the whole mountain was heavily forested until much was cleared for coffee planting. During the Great War natives moved in on the crown land and destroyed almost every tree. The hillside directly opposite my camp had been cleared and rows of *Grevillea* planted as shade trees for the coffee. When the Estate was abandoned during the war, native trees, protected by the *Grevillea*, sprang up and are now between 60 and 70 feet in height. I mention this as representing the most amazing come-back of forest which I have seen anywhere in East Africa. The forest-floor conditions appeared indistinguishable to me from those in adjacent virgin forest.

Despite this, however, animal life, which in species closely resembles the fauna of Amani at 3000 feet in the Usambara Mountains, and only 20 miles distant across the plain, was decidedly scarce; birds were conspicuously absent. In part, of course, this may be seasonal, for the three weeks spent at Amani in 1926 were during the November rains when amphibia were breeding, hence their predators more in evidence. The three weeks spent on Magrotto were immediately following the coldest months in the year when the temperature falls 57° F. (14° C.) and a proportion of poikilothermous vertebrates may be assumed to be quiescent.

Another factor, though only affecting the snake census, might be found in the composition of the plantation personnel. At Amani the 'hands' were largely of the Nyamwezi tribe, who are notoriously less fearful of these reptiles. At Magrotto the labour was largely drawn from local people, who, though helpful, and willing to bring in such snakes as they came across, displayed no great enthusiasm.

At Magrotto 21 species of amphibia were collected of which only 3 had not been taken at Amani, 1 of these was the forest-edge form (*Rana m. renusta*) of the widely distributed savanna species; significantly enough both the others were recent invaders from the coastal plain, i.e. *Rana o. oxyrhynchus* (instead of the forest-edge *R. o. gribin-guensis* taken at Amani) and *Arthroleptis s. stenodactylus* (instead of the sylvicoline *A. s. lönnbergi* taken at Amani). Three remaining species taken at Amani though not encountered on Magrotto, were

*Xenopus* and *Hyperolius* forms typical of the coastal plain and which almost certainly will be found on Magrotto. A good series of topotypes of *H. substriatus* (= *puncticulatus*) were preserved.

When we examine the composition of Magrotto's reptile fauna, of which 26 kinds were collected, we encounter a similar situation. Instead of *Typhlops p. gierrai*, whose presence one might reasonably have expected, we encountered only the typical form; as for *Neusterophis olivaceus*, the montane *uluguruensis* occurred in almost equal proportions to the typical savanna race. To sum up, for both snakes and lizards, precisely 50% were sylvicoline, the rest savanna, reflecting the fact that, though we spent more time hunting in the forest, reptile life was more conspicuous in the plantation where immigrant forms were alike supplanting the forest fauna in the zoological and botanical realms.

As already stated, forest birds were scarce at the time of our visit, only 6 or 7 being obtained, of which half were bulbuls. To these might be added the great eagles (*Stephanoæetus coronatus*) seen. Of the species collected 1 (or 2) were described from the nearby Usambara Mountains, 4 from Kilimanjaro, and 1 from Mt. Elgon. A total of approximately 25% of the species being sylvicoline.

Similarly with the mammals not more than 25% of the 16 species collected were forest forms in its restricted sense, though the proportion might be raised almost to 50% by the inclusion of certain doubtful creatures like *Heliosciurus u. undulatus* of Kilimanjaro which, like the galagoes and monkeys, are arboreal and probably as much at home in the coastal bush as in virgin rain forest.

*Tanga, Tanga Province.* 5°40' S., 39°7' E. Alt. 50 feet.

At Tanga Hotel prior to embarkation.

Arrived at noon on July 21 and left on the 23rd.

Fine and hot. Average annual rainfall 59.24 inches.

Spent my last afternoon in Tanganyika searching for *Typhlops platyrhynchus*, of which Tanga is type locality, in the sandy area from which the coconut palms had been removed in order to prepare the site for a military landing field. All that we got were 3 species of frogs and 2 of geckos, all typical of the coastal plain life zone.

#### KENYA COLONY

*Likoni, Seydie Province.* 4°5' S., 39°39' E. Alt. 50 feet.

On board R. M. S. Dunbar Castle.

Docked alongside Kilindini Wharf July 24 and sailed on the 26th.

Showers and sunshine. Rainfall very variable, but the annual average about 51 inches.

**Likoni** is a ferry landing on the mainland *opposite* **Kilindini**, Mombasa Island, the second locality in bold face type appearing on many labels. It is a region of old coconut plantations and typical coastal vegetation. I spent two mornings there in search of additional material of a new gecko (*Hemidactylus t. barbouri*) which I had taken previously at nearby Changamwe, and which I purposed describing. In addition to this and other lizards we captured the first three examples of a skink (*Riopa pemeanum*) which I had ever collected, the species being unknown from the continent until relatively recently. A frog, two pigmy mice (*Leggada b. vicina*) of a race described from Takaungu a few miles to the north, and a good haul of invertebrates comprised the final spoils of a trip which had lasted nine months.

PLATES

PLATE 1



PLATE 1

Map showing Principal Collecting Localities

1938

Landing at Mombasa (25.x), except for a stopover at Naivasha and Kinangop (26-31.x), Loveridge proceeded by rail direct to Jinja (1-5.xi). Thence to Mabira Forest (5-21.xi), Budongo Forest (22.xi-7.xii), Kibale Forest (8-19.xii), Bundibugyo near Bwamba Forest (19-26.xii), Bugoye, foot of Ruwenzori Mountains (26-28.xii) and Mubuku Valley at 7000 ft. (29.xii-).

1939

On leaving Mubuku (-9.i) Loveridge descended down the valley to Mihunga, *circa* 6000 ft. (9-21.i), then back to Bugoye (21-24.i), Nyakabande (25-30.i), Mushongero (30.i-4.xi), returned to Nyakabande (4-8.ii); Kisenyi (8-13.ii), Goma (13-14.ii), Mamvu on Idjwi Island (14-16.ii), Upper Mulinga on Idjwi (16.ii-6.iii), Uvira (7-8.iii), Ujiji (9-16.iii), Dar es Salaam (18-19.iii), Mikindani (22-24.iii), Mbanja (25.iv-6.v), Lake Rutamba (6-8.v), Nchingidi (9-21.v), Lindi (22.v-4.vi), Siga Caves (7-17.vi), Amboni Estate (17-27.vi), Magrotto Mountain (27.vi-21.vii), Tanga (21-23.vii), Kilindini (24-26.vii).

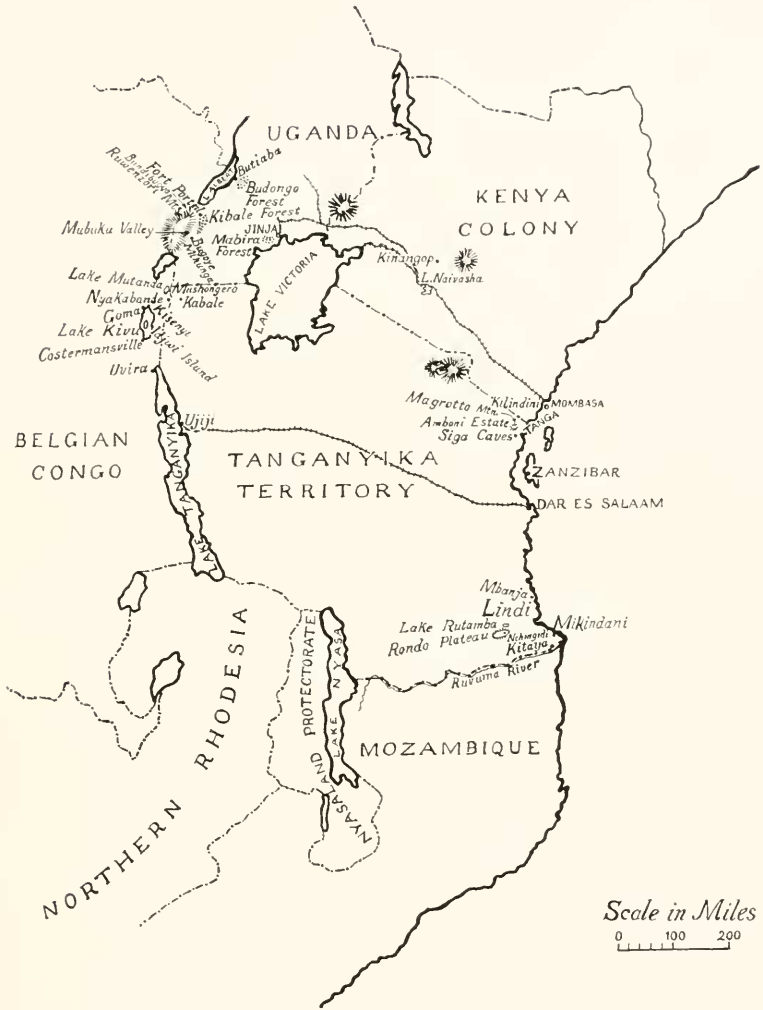


PLATE 2

PLATE 2

Fig. 1. Transport by water—Canoes on Lake Mutanda

These dugouts, waiting to take us from Mushongero to the south end of the Lake, speak volumes for the patient toilers who, with adze or other simple tool, gouged out the hard timber from the fallen tree. Moreover, as no trees of sufficient height to provide sixteen or eighteen-foot canoes are to be found within many miles of the Lake, these incredibly heavy craft had to be pushed uphill and down dale on rollers by human muscle alone.

Fig. 2. Transport by Land—Our Lorry at Mubango

African travel today involves increasing use of modern methods of transport, resort to head-porterage being reserved for roadless regions or where the ascent of a mountain by native track is called for. In modernizing Africa motor-driven vehicles will soon be claiming precedence over predators and snakes as the major menace to life and limb. The photograph depicts our native-driven Mercedes-Bentz, which at the time was carrying my six boys atop a load consisting of a ton of camp and collecting equipment, irresolutely resting on marshy ground where faulty driving had landed her at the very start of our '*safari!*'



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2

PLATE 3

PLATE 3

Fig. 1. Prospecting For a Camp Site—Forest-edge, Budongo

Budongo Forest, which covers about 180 square miles, gathers about its fringes a dense and often impenetrable undergrowth of bush. Within, however, where the unbroken forest canopy, two-hundred feet overhead, prevents shrubs springing up among the mighty buttress roots, one can wander at will over the thick layer of leaves which carpet the forest floor.

Fig. 2. Tractor and Tramway are Employed for Logging at Bisu

The absence of paths and water drove us unwillingly to camp at Bisu, in close proximity to the Buchanan Saw Mills. There access to the forest was assured by a track cut for the tramway depicted above. Unfortunately the noisy tractor and its train, which made the three-mile run through the forest every twelve hours, had driven elephant, buffalo, and other large mammals to seek quiet elsewhere.





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2



PLATE 4

PLATE 4

Fig. 1. Native Path through Mabira Forest

Paths were few and far between, yet the undergrowth was so impenetrable that they provided the only means for reaching the deeper forest to sample its denizens. While monkeys and squirrels fell victims to this inquisitiveness, parrots screeched or clambered about in the tree-tops, where, with a host of smaller birds feeding in the forest canopy, they enjoyed complete immunity, being out of range of gunshot.

Fig. 2. A Semi-pigmy of Baamba or Batwa Stock

The Baamba clans inhabiting the Ituri Forest region northwest of the Ruwenzori Mountains, closely resemble their Batwa kinsmen of the Congo forests. Attired only in a civet skin, the sturdy subject of the photograph presents a marked contrast to the tall, cotton-clad Muganda on the forest path in Mabira.

Fig. 3. Family Group at Bundibugyo in Toro

Yet another popular style in dress is exhibited by this Bantu family relaxing after their early morning labours in the hot region just above the Semliki Valley. Hundreds of natives representing many tribes, visited our camp at Bundibugyo. If I am not mistaken those shown are Batoro, the agricultural middle-class members of this society, superior to the hunting Baamba from whom they obtain meat in exchange for cereals, yet themselves formerly subject to their pastoral overlords, the Hamitic Bahima.



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2



3